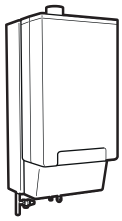
Installation manual

Daikin Altherma hybrid heat pump – heat pump module



EHYHBH05AA
EHYHBH08AA
EHYHBX08AA

CE - DECLARATION-OF-CONFORMITY
CE - KONFORMITÄTSERKLÄRUNG
CE - DECLARATION-DE-CONFORMITE
CE - CONFORMITEITSVERKLARING
CE - DECLARACION-DE-CONFORMIDAD
CE - DICHIARAZIONE-DI-CONFORMITA
CE - ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ
CE - DECLARAÇÃO-DE-CONFORMIDADE
CE - ЗАЯВЛЕНИЕ-О-СООТВЕТСТВИИ
CE - OVERENSSTEMMELSESERKLÆRING
CE - FÖRSÄKRAN-OM-ÖVERENSTÄMMELSE
CE - ERKLÆRING OM-SAMSVAR
CE - ILMOITUS-YHDENMUKAISUUDESTA
CE - PROHLÁŠENÍ-O-SHODĚ
CE - IZJAVA-O-USKLAĐENOSTI
CE - MEGFELELŐSÉGI-NYILATKOZAT
CE - DEKLARACJA-ZGODNOŚCI
CE - DECLARAŢIE-DE-CONFORMITATE
CE - IZJAVA O SKLADNOSTI
CE - VASTAVUSDEKLARATSIOON
CE - ДЕКЛАРАЦИЯ-ЗА-СЪОТВЕТСТВИЕ
CE - ATITIKTIES-DEKLARACIJA
CE - ATBILSTĪBAS-DEKLARĀCIJA
CE - VYHLÁSENIE-ZHODY
CE - UYGUNLUK-BEYANI

Daikin Europe N.V.

01 (GB) declares under its sole responsibility that the equipment to which this declaration relates:
02 (D) erklärt auf seine alleinige Verantwortung daß die Ausrüstung für die diese Erklärung bestimmt ist:
03 (F) déclare sous sa seule responsabilité que l'équipement visé par la présente déclaration:
04 (NL) verklaart hierbij op eigen exclusieve verantwoordelijkheid dat de apparatuur waarop deze verklaring betrekking heeft:
05 (E) declara bajo su única responsabilidad que el equipo al que hace referencia la declaración:
06 (I) dichiara sotto la propria responsabilità che gli apparecchi a cui è riferita questa dichiarazione:
07 (GR) δηλώνει με αποκλειστική της ευθύνη ότι ο εξοπλισμός στον οποίο αναφέρεται η παρούσα δήλωση:
08 (P) declara sob sua exclusiva responsabilidade que os equipamentos a que esta declaração se refere:
09 (RUS) заявляет, исключительно под свою ответственность, что оборудование, к которому относится настоящее заявление:
10 (DK) erklærer under eneansvarlig, at udstyret, som er omfattet af denne erklæring:
11 (S) deklarerar i egenskap av huvudansvarig, att utrustningen som berörs av denna deklaration innebär att:
12 (N) erklærer et fullstendig ansvar for at det utstyr som berøres av denne deklarasjon innebærer at:
13 (FIN) ilmoittaa yksinomaan omalla vastuullaan, että tämän ilmoituksen tarkoittamat laitteet:
14 (CZ) prohlašuje ve své plné odpovědnosti, že zařízení, k němuž se toto prohlášení vztahuje:
15 (HR) izjavljuje pod isključivo vlastitom odgovornošću da oprema na koju se ova izjava odnosi:
16 (H) teljes felelőssége tudatában kijelenti, hogy a berendezések, melyekre e nyilatkozat vonatkozik:
17 (PL) deklaruje na własną i wyłączną odpowiedzialność, że urządzenia, których ta deklaracja dotyczy:
18 (RO) declară pe proprie răspundere că echipamentele la care se referă această declaraţie:
19 (SLO) z vso odgovornostjo izjavlja, da je oprema naprav, na katero se izjava nanaša:
20 (EST) kinnitab oma täielikul vastutusel, et käesoleva deklaratsiooni alla kuuluv varustus:
21 (BG) декларира на своя отговорност, че оборудването, за което се отнася тази декларация:
22 (LT) visiška savo atsakomybe skelbia, kad įranga, kuriai taikoma ši deklaracija:
23 (LV) ar pilnu atbildību apliecina, ka tālāk aprakstītās iekārtas, uz kurām attiecas šī deklarācija:
24 (SK) vyhlasuje na vlastnú zodpovednosť, že zariadenie, na ktoré sa vzťahuje toto vyhlásenie:
25 (TR) tamamen kendi sorumlulu□unda olmak üzere bu bildirinin ilgili oldu□u donanımının aşa□ıdaki gibi oldu□unu beyan eder:

EHYHBH05AAV3, EHYHBH08AAV3, EHYHBX08AAV3,

01 are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:
02 der/den folgenden Norm(en) oder einem anderen Normdokument oder -dokumenten entspricht/entsprechen, unter der Voraussetzung, daß sie gemäß unseren Anweisungen eingesetzt werden:
03 sont conformes à la/aux norme(s) ou autre(s) document(s) normatif(s), pour autant qu'ils soient utilisés conformément à nos instructions:
04 conform de volgende norm(en) of één of meer andere bindende documenten zijn, op voorwaarde dat ze worden gebruikt overeenkomstig onze instructies:
05 están en conformidad con la(s) siguiente(s) norma(s) u otro(s) documento(s) normativo(s), siempre que sean utilizados de acuerdo con nuestras instrucciones:
06 sono conformi al(i) seguente(i) standard(s) o altro(i) documento(i) a carattere normativo, a patto che vengano usati in conformità alle nostre istruzioni:
07 είναι σύμφωνα με το(α) ακόλουθο(α) πρότυπο(α) ή άλλο έγγραφο(α) κανονισμών, υπό την προϋπόθεση ότι χρησιμοποιούνται σύμφωνα με τις οδηγίες μας:
08 estão em conformidade com a(s) seguinte(s) norma(s) ou outro(s) documento(s) normativo(s), desde que estes sejam utilizados de acordo com as nossas instruções:
09 соответствуют следующим стандартам или другим нормативным документам, при условии их использования согласно нашим инструкциям:
10 overholder følgende standard(er) eller andet/andre retningsgivende dokument(er), forudsat at disse anvendes i henhold til vore instrukser:
11 respektive utrustning är utförd i överensstämmelse med och följer följande standard(er) eller andra normgivande dokument, under förutsättning att användning sker i överensstämmelse med våra instruktioner:
12 respektive utstyr er i overensstemmelse med følgende standard(er) eller andre normgivende dokument(er), under forutssetning av at disse brukes i henhold til våre instrukser:
13 vastaavat seuraavien standardien ja muiden ohjeellisten dokumenttien vaatimuksia edellyttäen, että niitä käytetään ohjeidemme mukaisesti:
14 za předpokladu, že jsou využívány v souladu s našimi pokyny, odpovídají následujícím normám nebo normativním dokumentům:
15 u skladu sa slijedećim standardom(ima) ili drugim normativnim dokumentom(ima), uz uvjet da se oni koriste u skladu s našim uputama:
16 megfelelnek az alábbi szabvány(ok)nak vagy egyéb irányadó dokumentum(ok)nak, ha azokat előírás szerint használják:
17 spełniają wymogi następujących norm i innych dokumentów normalizacyjnych, pod warunkiem że używane są zgodnie z naszymi instrukcjami:
18 sunt în conformitate cu următorul (următoarele) standard(e) sau alt(e) document(e) normativ(e), cu condiţia ca acestea să fie utilizate în conformitate cu instrucţiunile noastre:
19 skladni z naslednjimi standardi in drugimi normativi, pod pogojem, da se uporabljajo v skladu z našimi navodili:
20 on vastavuses järgmis(t)e standardi(te)ga või teiste normatiivsete dokumentidega, kui neid kasutatakse vastavalt meie juhenditele:
21 съответстват на следните стандарти или други нормативни документи, при условие, че се използват съгласно нашите инструкции:
22 atitinka žemiau nurodytus standartus ir (arba) kitus norminius dokumentus su sąlyga, kad yra naudojami pagal mūsų nurodymus:
23 tad, ja lietoti atbilstoši ražotāja norādījumiem, atbilst sekojošiem standartiem un citiem normatīviem dokumentiem:
24 sú v zhode s nasledovnou(ými) normou(ami) alebo iným(i) normatívnym(i) dokumentom(ami), za predpokladu, že sa používajú v súlade s našim návodom:
25 ürünün, talimatlarımıza göre kullanılması koşuluyla aşağıdaki standartlar ve norm belirten belgelerle uyumludur:

EN60335-2-40,

01 following the provisions of:
02 gemäß den Vorschriften der:
03 conformément aux stipulations des:
04 overeenkomstig de bepalingen van:
05 siguiendo las disposiciones de:
06 secondo le prescrizioni per:
07 με τήρηση των διατάξεων των:
08 de acordo com o previsto em:
09 в соответствии с положениями:
10 under iagttagelse af bestemmelserne i:
11 enligt villkoren i:
12 gitt i henhold til bestemmelsene i:
13 noudattaen määräyksiä:
14 za dodržení ustanovení předpisu:
15 prema odredbama:
16 követi a(z):
17 zgodnie z postanowieniami Dyrektyw:
18 în urma prevederilor:
19 ob upoštevanju določb:
20 vastavalt nõuetele:
21 следвайки клаузите на:
22 laikantis nuostatų, pateikiamų:
23 ievērojot prasības, kas noteiktas:
24 održiavajúc ustanovenia:
25 bunun koşullarına uygun olarak:

Low Voltage 2006/95/EC
Electromagnetic Compatibility 2004/108/EC *

01 Directives, as amended.
02 Direktiven, gemäß Änderung.
03 Directives, telles que modifiées.
04 Richtlijnen, zoals geamendeerd.
05 Directivas, según lo enmendado.
06 Direttive, come da modifica.
07 Οδηγιών, όπως έχουν τροποποιηθεί.
08 Directivas, conforme alteração em.
09 Директив со всеми поправками.
10 Direktiver, med senere ændringer.
11 Direktiv, med företagna ändringar.
12 Direktiver, med foretatte endringer.
13 Direktiivejä, sellaisina kuin ne ovat muutettuina.
14 v platném znění.
15 Smjernice, kako je izmijenjeno.
16 irányelv(ek) és módosításaik rendelkezéseit.
17 z późniejszymi poprawkami.
18 Directivelor, cu amendamentele respective.
19 Direktive z vsemi spremembami.
20 Direktiivid koos muudatustega.
21 Директиви, с техните изменения.
22 Direktyvose su papildymais.
23 Direktīvās un to papildinājumos.
24 Smernice, v platnom znení.
25 Değiştirilmiş halleriyle Yönetmelikler.

01 **Note*** as set out in **<A>** and judged positively by **<B>** according to the **Certificate** **<C>**.
02 **Hinweis*** wie in **<A>** aufgeführt und von **<B>** positiv beurteilt gemäß **Zertifikat** **<C>**.
03 **Remarque*** tel que défini dans **<A>** et évalué positivement par **<B>** conformément au **Certificat** **<C>**.
04 **Bemerk*** zoals vermeld in **<A>** en positief beoordeeld door **<B>** overeenkomstig **Certificaat** **<C>**.
05 **Nota*** como se establece en **<A>** y es valorado positivamente por **<B>** de acuerdo con el **Certificado** **<C>**.
06 **Nota*** delineato nel **<A>** e giudicato positivamente da **<B>** secondo il **Certificato** **<C>**.
07 **Σημείωση*** όπως καθορίζεται στο **<A>** και κρίνεται θετικά από το **<B>** σύμφωνα με το **Πιστοποιητικό** **<C>**.
08 **Nota*** tal como estabelecido em **<A>** e com o parecer positivo de **<B>** de acordo com o **Certificado** **<C>**.
09 **Примечание*** как указано в **<A>** и в соответствии с положительным решением **<B>** согласно **Свидетельству** **<C>**.
10 **Bemærk*** som anført i **<A>** og positivt vurderet af **<B>** i henhold til **Certifikat** **<C>**.
11 **Information*** enligt **<A>** och godkänts av **<B>** enligt **Certifikatet** **<C>**.
12 **Merk*** som det fremkommer i **<A>** og gjennom positiv bedømmelse av **<B>** ifølge **Sertifikat** **<C>**.
13 **Huom*** jotka on esitetty asiakirjassa **<A>** ja jotka **<B>** on hyväksynyt **Sertifikaatin** **<C>** mukaisesti.
14 **Poznámka*** jak bylo uvedeno v **<A>** a pozitivně zjištěno **<B>** v souladu s **osvědčením** **<C>**.
15 **Napomena*** kako je izloženo u **<A>** i pozitivno ocijenjeno od strane **<B>** prema **Certifikatu** **<C>**.
16 **Megjegyzés*** a(z) **<A>** alapján, a(z) **<B>** igazolta a megfelelést, a(z) **<C>** **tanúsítvány** szerint.
17 **Uwaga*** zgodnie z dokumentacją **<A>**, pozytywną opinią **<B>** i **Świadectwem** **<C>**.
18 **Notă*** aşa cum este stabilit în **<A>** şi apreciat pozitiv de **<B>** în conformitate cu **Certificatul** **<C>**.
19 **Opomba*** kot je določeno v **<A>** in odobreno s strani **<B>** v skladu s **certifikatom** **<C>**.
20 **Märkus*** nagu on näidatud dokumendis **<A>** ja heaks kiidetud **<B>** järgi vastavalt **sertifikaadile** **<C>**.
21 **Забележка*** както е изложено в **<A>** и оценено положително от **<B>** съгласно **Сертификата** **<C>**.
22 **Pastaba*** kaip nustatyta **<A>** ir kaip teigiamai nuspręsta **<B>** pagal **Sertifikatą** **<C>**.
23 **Piezīmes*** kā norādīts **<A>** un atbilstoši **<B>** pozitīvajam vērtējumam saskaņā ar **sertifikātu** **<C>**.
24 **Poznámka*** ako bolo uvedené v **<A>** a pozitívne zistené **<B>** v súlade s **osvedčením** **<C>**.
25 **Not*** **<A>**'da belirtildiği gibi ve **<C>** **Sertifikasına** göre **<B>** tarafından olumlu olarak değerlendirildiği gibi.

<A>	**DAIKIN.TCF.025E15/05-2013**
<B>	**DEKRA (NB0344)**
<C>	**2082543.0551-QUA/EMC**

Jean-Pierre Beuselinck
Director
Ostend, 4th of November 2013

DAIKIN EUROPE N.V.
Zandvoordestraat 300, B-8400 Oostende, Belgium

3P353176-1B

Table of contents

1 About the documentation

1.1 About this document

Target audience

Authorised installers

Documentation set

This document is part of a documentation set. The complete set consists of:

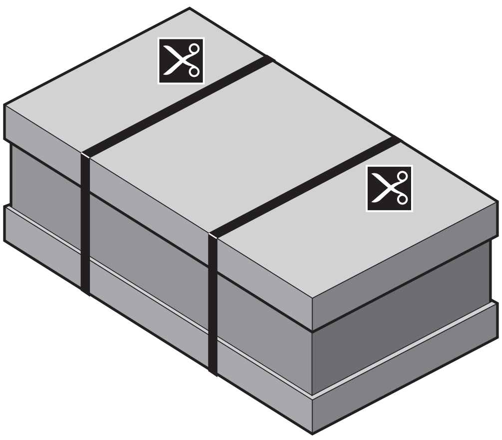
Document	Contains…	Format
General safety precautions	Safety instructions that you must read before installing	Paper (in the box of the indoor unit)
Heat pump module installation manual	Installation instructions	
Gas boiler module installation manual	Installation and operation instructions	Paper (in the box of the gas boiler unit)
Outdoor unit installation manual	Installation instructions	Paper (in the box of the outdoor unit)
Installer reference guide	Preparation of the installation, technical specifications, reference data,…	Digital files on http://www.daikineurope.com/support-and-manuals/product-information/.
Addendum book for optional equipment	Additional info about how to install optional equipment	Paper (in the box of the indoor unit) Digital files on http://www.daikineurope.com/support-and-manuals/product-information/.

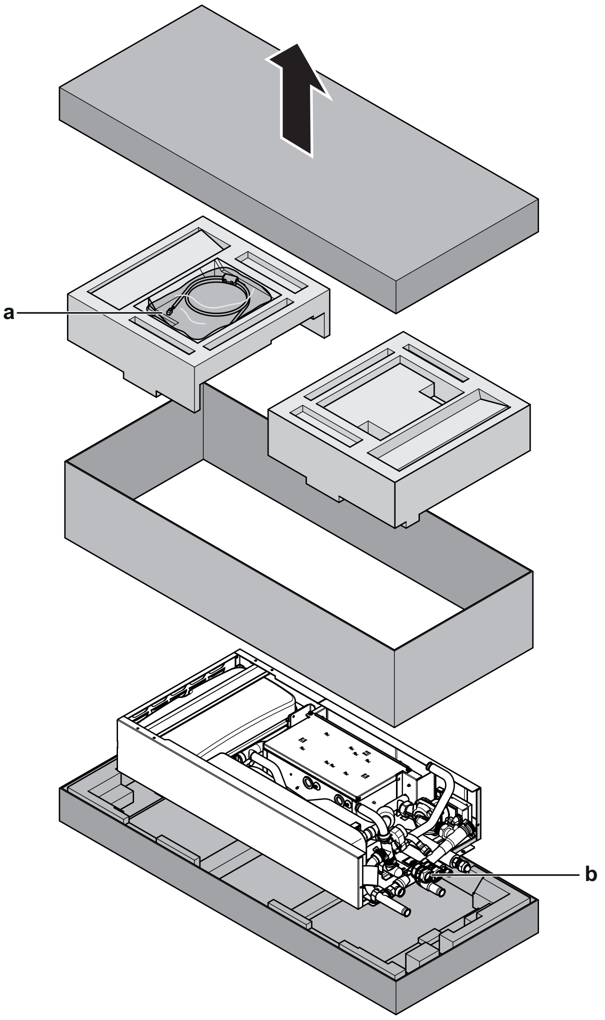
Latest revisions of the supplied documentation may be available on the regional Daikin website or via your dealer.

2 About the box

2.1 Indoor unit

2.1.1 To unpack the indoor unit





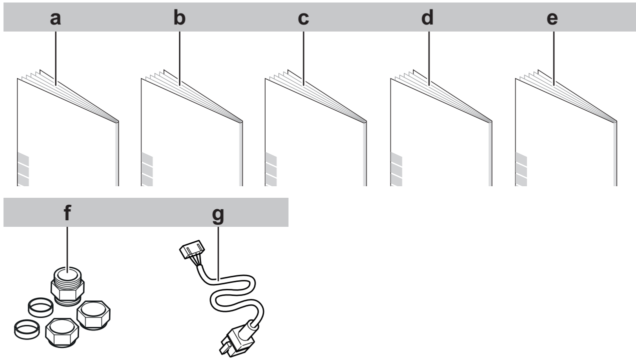
a Installation manual, operation manual, addendum book for optional equipment, quick installation guide, general safety precautions, boiler communication cable
b Connection pieces for the gas boiler

> **INFORMATION**
>
> Do NOT throw away the upper cardboard cover. On the outside of the cardboard cover, the installation pattern is printed.

2.1.2 To remove the accessories from the indoor unit

The installation manual, operation manual, addendum book for optional equipment, general safety precautions, quick installation guide, and boiler communication cable are located in the upper part of the box. The connection pieces for the gas boiler are attached to the water piping.

1. Remove the accessories as described in "2.1.1 To unpack the indoor unit" on page 3.



a General safety precautions
b Addendum book for optional equipment
c Indoor unit installation manual
d Operation manual
e Quick installation guide
f Connection pieces for gas boiler
g Boiler communication cable

3 Preparation

3.1 Preparing water piping

3.1.1 To check the water volume

Minimum water volume

Check that the total water volume in the installation is minimum 13.5 liter, the internal water volume of the indoor unit NOT included.

> **INFORMATION**
>
> In critical processes, or in rooms with a high heat load, extra water might be required.

> **NOTICE**
>
> When circulation in each space heating loop is controlled by remotely controlled valves, it is important that the minimum water volume is guaranteed, even if all of the valves are closed.

3.2 Preparing electrical wiring

3.2.1 Overview of electrical connections for external and internal actuators

Item	Description	Wires	Maximum running current
Outdoor unit and indoor unit power supply			
1	Power supply for outdoor unit	2+GND	(a)
2	Power supply and interconnection cable to indoor unit	3+GND	(g)
3	Power supply gas boiler	2+GND	(c)
4	Preferential kWh rate power supply (voltage free contact)	2	(e)
5	Normal kWh rate power supply	2	6.3 A
User interface			
6	User interface	2	(f)
Optional equipment			
7	3-way valve	3	100 mA(b)
8	Domestic hot water tank thermistor	2	(d)
9	Power supply for drain pan heater	2	(b)
10	Room thermostat	3 or 4	100 mA(b)
11	Outdoor ambient temperature sensor	2	(b)
12	Indoor ambient temperature sensor	2	(b)
13	Heat pump convector	4	100 mA(b)
Field supplied components			
14	Shut-off valve	2	100 mA(b)
15	Electricity meter	2	(b)
16	Domestic hot water pump	2	(b)
17	Alarm output	2	(b)
18	Changeover to external heat source control	2	(b)
19	Space cool/heat operation control	2	(b)
20	Power consumption digital inputs	2 (per input signal)	(b)
21	Gas meter	2	(b)

(a) Refer to name plate on outdoor unit.
(b) Minimum cable section 0.75 mm².
(c) Use the cable supplied with the boiler.
(d) The thermistor and connection wire (12 m) are delivered with the domestic hot water tank.
(e) Cable section 0.75 mm² till 1.25 mm²; maximum length: 50 m. Voltage-free contact shall ensure the minimum applicable load of 15 V DC, 10 mA.
(f) Cable section 0.75 mm² till 1.25 mm²; maximum length: 500 m. Applicable for both single user interface and dual use interface connection.
(g) Cable section 1.5 mm²; maximum length: 50 m.

NOTICE

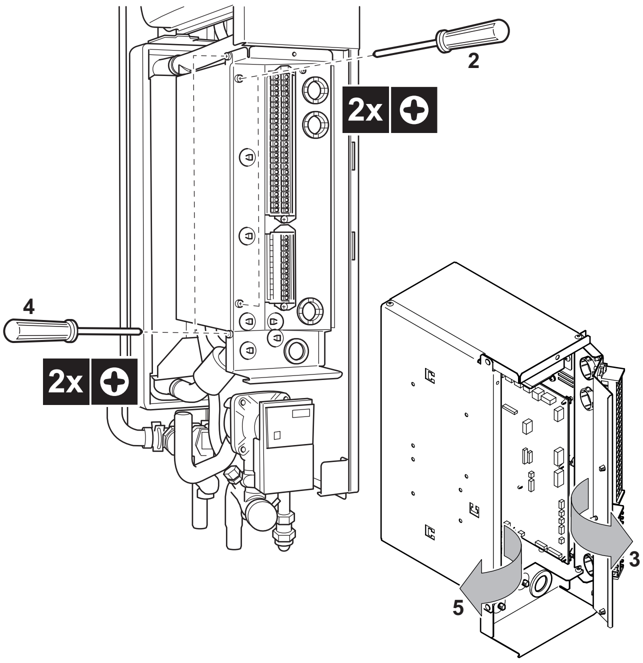
More technical specifications of the different connections are indicated on the inside of the indoor unit.

4 Installation

4.1 Opening the units

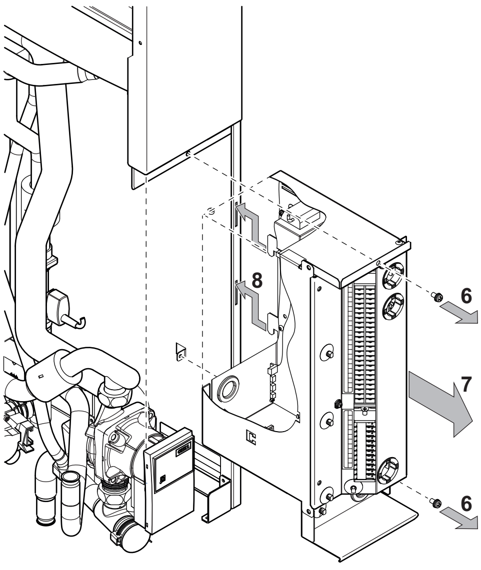
4.1.1 To open the switch box cover of the indoor unit

1. Remove the side panel at the right side of the indoor unit. The side panel is fixed at the bottom with 1 screw.
2. Remove the upper and lower screw on the side panel of the switch box.
3. The right panel of the switch box will open.
4. Remove the upper and lower screw on the front panel of the switch box.
5. The front panel of the switch box will open.



When the boiler is installed and access to the switch box is required, please follow the steps below.

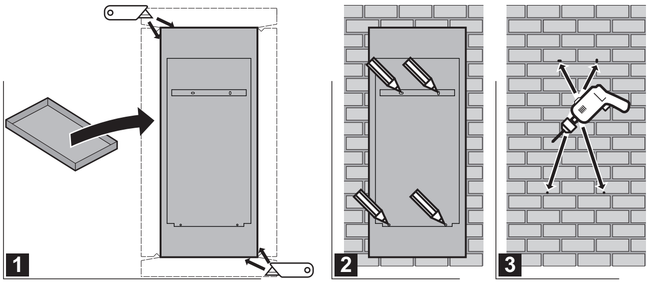
6. Remove the upper and lower screw on the side panel of the switch box.
7. Remove the switch box from the unit.
8. Hook the switch box to the side of the unit with the hooks foreseen on the switch box.



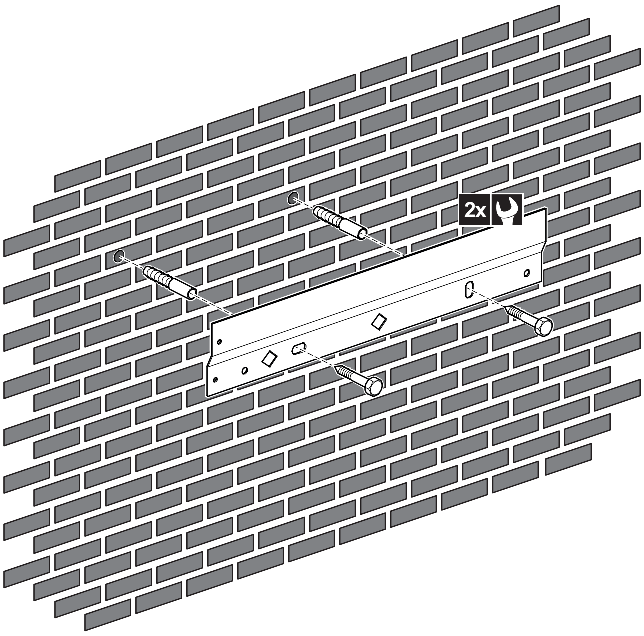
4.2 Mounting the indoor unit

4.2.1 To install the indoor unit

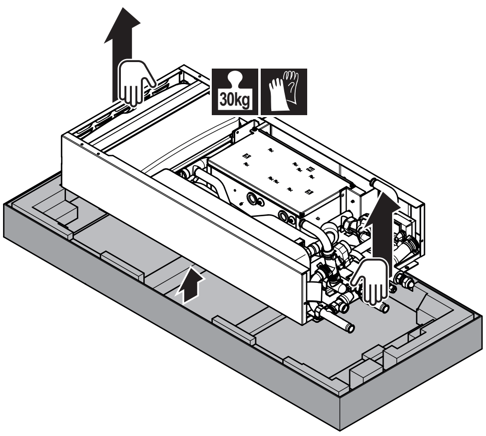
1 Put the installation pattern (see box) on the wall and follow the steps as shown below.



2 Fix the wall bracket to the wall with 2 M8 bolts.



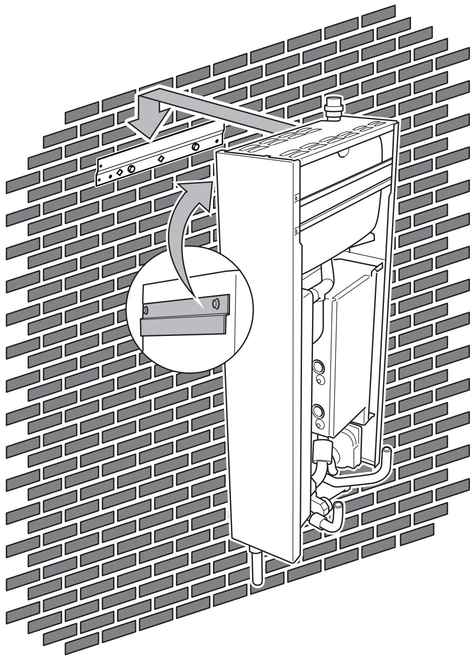
3 Lift the unit.



4 Tilt the top of the unit against the wall at the position of the wall bracket.

5 Slide the bracket on the back of the unit over the wall bracket. Make sure the unit is fixed properly. You can additionally fix the bottom side of the unit with 2 M8 bolts.

6 The unit is mounted to the wall.

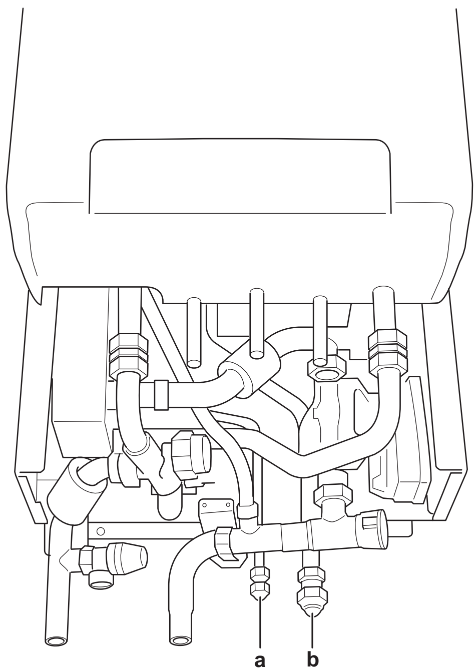


4.3 Connecting the refrigerant piping

See the outdoor unit installation manual for all guidelines, specifications and installation instructions.

4.3.1 To connect the refrigerant piping to the indoor unit

1 Connect the liquid stop valve from the outdoor unit to the refrigerant liquid connection of the indoor unit.



a Refrigerant liquid connection
b Refrigerant gas connection

2 Connect the gas stop valve from the outdoor unit to the refrigerant gas connection of the indoor unit.

4.4 Connecting the water piping

4.4.1 Connecting the water piping of the indoor unit

To connect the water piping for space heating

NOTICE

In case of old heating installations, it is recommended to use a dirt separator. Dirt or sediment from the heating installation can damage the unit and reduce its lifetime.

NOTICE

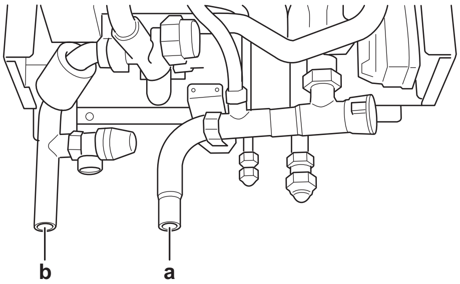
Do NOT use excessive force when connecting the piping. Deformation of the piping can cause malfunctioning of the unit.

NOTICE

- It is recommended to install shut-off valves to space heating in and space heating out connections. Shut-off valves are field supplied. They allow service to the unit without draining the whole system.
- Foresee a drain/fill point to drain or fill the space heating circuit

1 Connect the water inlet connection (Ø22 mm).

2 Connect the water outlet connection (Ø22 mm).



a Water inlet
b Water outlet

3 In case of connection with the optional domestic hot water tank, see the installation manual of the domestic hot water tank.

4.4.2 To fill the domestic hot water tank

For installation instructions, see the installation manual of the domestic hot water tank.

4.4.3 To insulate the water piping

The piping in the complete water circuit must be insulated to prevent condensation during cooling operation and reduction of the heating and cooling capacity.

If the temperature is higher than 30°C and the humidity is higher than RH 80%, the thickness of the sealing materials should be at least 20 mm to prevent condensation on the surface of the sealing.

4.5 Connecting the electrical wiring

DANGER: RISK OF ELECTROCUTION

WARNING

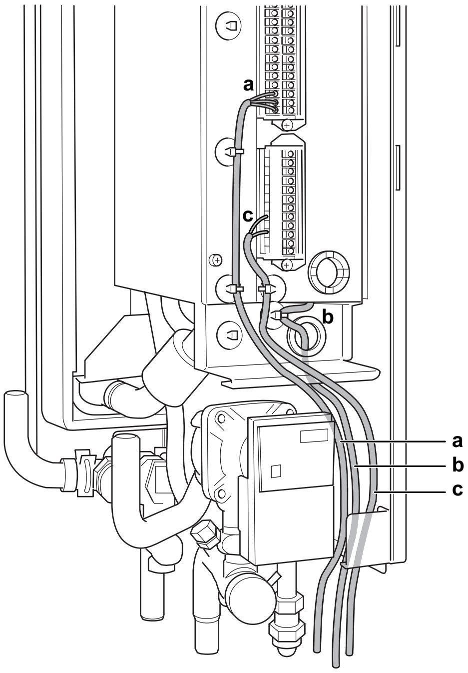
ALWAYS use multicore cable for power supply cables.

4.5.1 To connect the electrical wiring on the indoor unit

It is recommended to install all electrical wiring to the hydro box before installing the boiler.

1 Wiring should enter the unit from the bottom.

2 Routing of the wiring inside the unit should be as follows:



INFORMATION

When installing field supply or option cables, foresee sufficient cable length. This will make it possible to remove/reposition the switch box and gain acces to other components during service.

Routing	Possible cables (depending on unit type and installed options)
a	▪ Interconnection cable between indoor and outdoor unit ▪ Normal kWh rate power supply ▪ Preferential kWh rate power supply ▪ Heat pump convector (option) ▪ Room thermostat (option) ▪ 3-way valve (option in case of tank) ▪ Shut-off valve (field supply) ▪ Domestic hot water pump (field supply)

Routing	Possible cables (depending on unit type and installed options)
b	▪ Interconnection cable between indoor unit and gas boiler (see boiler manual for connection instructions)
c	▪ Outdoor ambient temperature sensor (option) ▪ User interface ▪ Indoor ambient temperature sensor (option) ▪ Electrical meter (field supply) ▪ Preferential power supply contact ▪ Gas meter (field supply)

3 Fix the cable with cable ties to the cable tie mountings to ensure strain relief and to make sure that it does NOT come in contact with the piping and sharp edges.

CAUTION

Do NOT push or place redundant cable length in the unit.

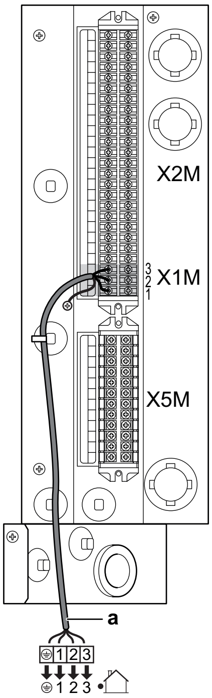
NOTICE

More technical specifications of the different connections are indicated on the inside of the indoor unit.

4.5.2 To connect the main power supply of the indoor unit

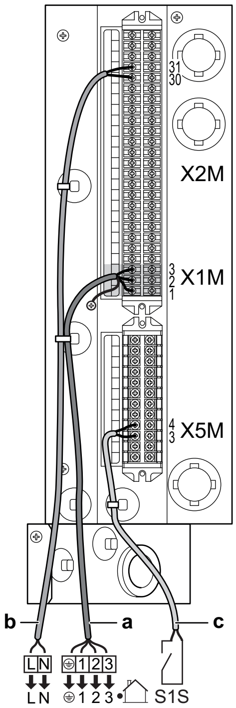
1 Connect the main power supply.

In case of normal kWh rate power supply



Legend: see illustration below.

In case of preferential kWh rate power supply



- **a** Interconnection cable (=main power supply)
- **b** Normal kWh rate power supply
- **c** Preferential power supply contact

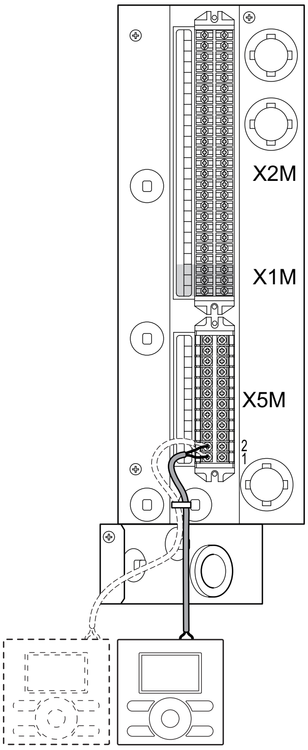
2 Fix the cable with cable ties to the cable tie mountings.

INFORMATION

If the system is connected to a preferential kWh rate power supply, a separate normal kWh rate power supply is required. Change connector X6Y according to the wiring diagram on the inside of the indoor unit.

4.5.3 To connect the user interface

1 Connect the user interface cable to the indoor unit.



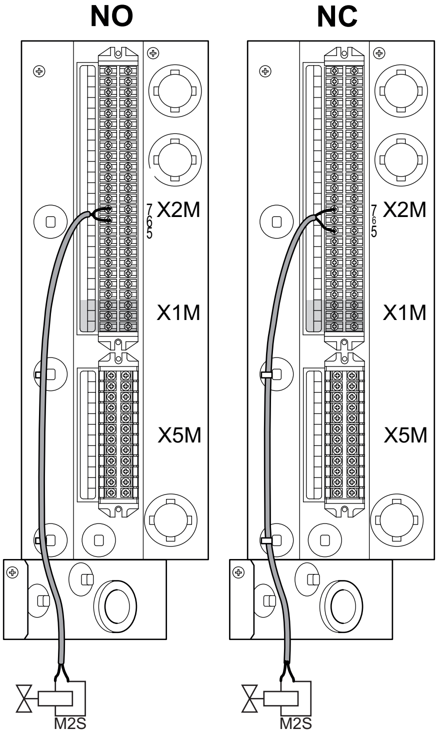
2 Fix the cable with cable ties to the cable tie mountings.

4.5.4 To connect the shut-off valve

1 Connect the valve control cable to the appropriate terminals as shown in the illustration below.

NOTICE

Wiring is different for a NC (normal closed) valve and a NO (normal open) valve.



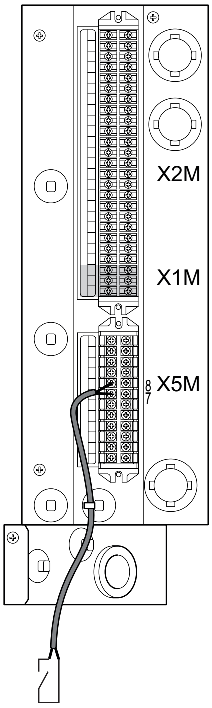
2 Fix the cable with cable ties to the cable tie mountings.

4.5.5 To connect the electrical meter

INFORMATION

In case of an electrical meter with transistor output, check the polarity. The positive polarity MUST be connected to X5M/7; the negative polarity to X5M/8.

1 Connect the electrical meters cable to the appropriate terminals as shown in the illustration below.



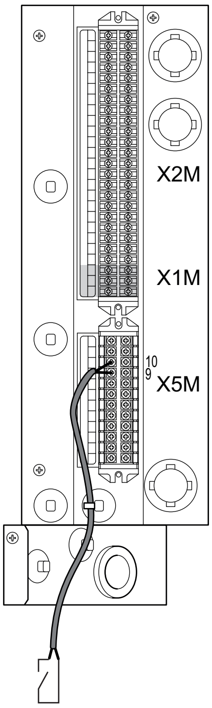
2 Fix the cable with cable ties to the cable tie mountings.

4.5.6 To connect the gas meter

INFORMATION

In case of a gas meter with transistor output, check the polarity. The positive polarity MUST be connected to X5M/9; the negative polarity to X5M/10.

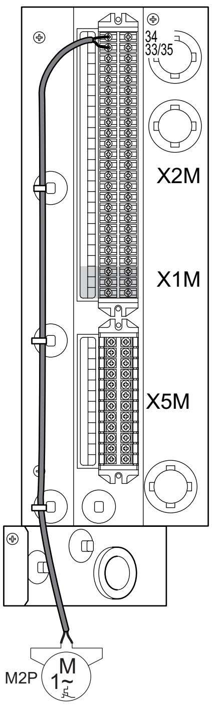
1 Connect the gas meter cable to the appropriate terminals as shown in the illustration below.



2 Fix the cable with cable ties to the cable tie mountings.

4.5.7 To connect the domestic hot water pump

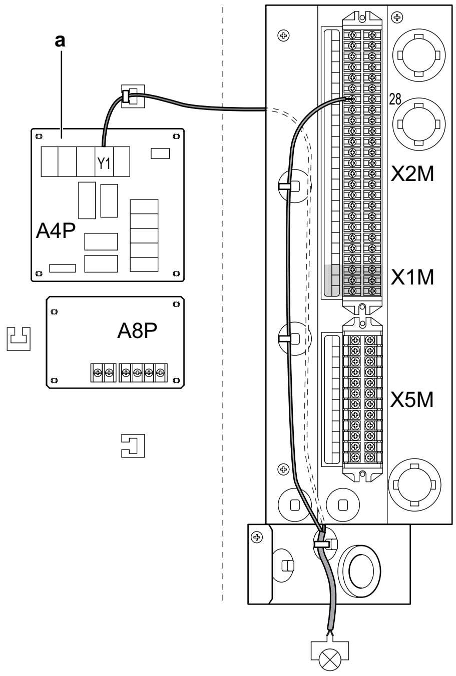
1 Connect the domestic hot water pump cable to the appropriate terminals as shown in the illustration below.



2 Fix the cable with cable ties to the cable tie mountings.

4.5.8 To connect the alarm output

1 Connect the alarm output cable to the appropriate terminals as shown in the illustration below.

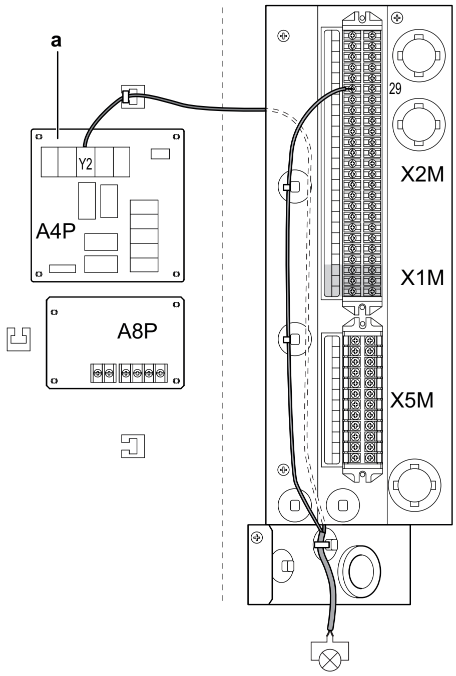


a Installation of EKRP1HB is required.

2 Fix the cable with cable ties to the cable tie mountings.

4.5.9 To connect the space cooling/heating ON/OFF output

1 Connect the space cooling/heating ON/OFF output cable to the appropriate terminals as shown in the illustration below.

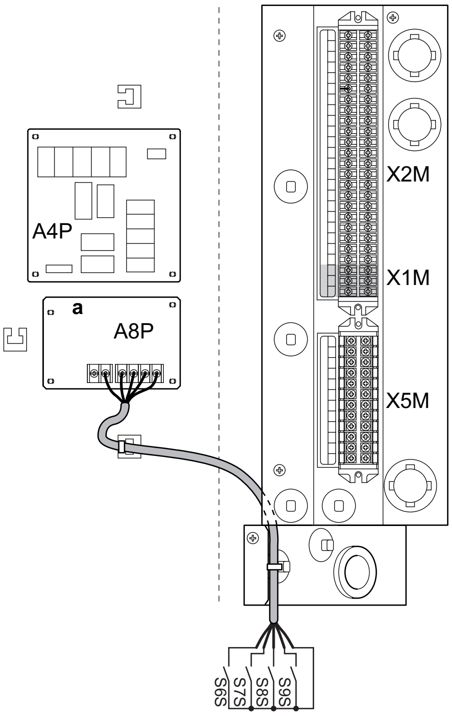


a Installation of EKRP1HB is required.

2 Fix the cable with cable ties to the cable tie mountings.

4.5.10 To connect the power consumption digital inputs

1 Connect the power consumption digital inputs cable to the appropriate terminals as shown in the illustration below.



a Installation of EKRP1AHTA is required.

2 Fix the cable with cable ties to the cable tie mountings.

4.6 Finishing the indoor unit installation

4.6.1 To close the indoor unit

1 Close the switch box.
2 Mount the side plate to the unit.
3 Mount the top plate.

NOTICE

When closing the indoor unit cover, make sure that the tightening torque does NOT exceed 4.1 N•m.

Before doing the configuration of the heat pump module, the gas boiler MUST be installed correctly.

5 Configuration

5.1 Indoor unit

5.1.1 Overview: Configuration

If you do NOT configure the system correctly, it might NOT work as expected. You can configure the system with the user interface.

When you turn ON the user interface for the first time (via the indoor unit), a quick wizard starts to help you configure the system. If necessary, you can also make changes to the configuration afterwards.

NOTICE

The explanation about the configuration in this chapter gives you ONLY basic explanations. For more detailed explanation and background information, see the installer reference guide.

The configuration influences the following:

- The calculations of the software
- What you can see on and do with the user interface

Legend for the settings tables:

- **#**: Breadcrumb in the menu structure
- **Code**: Code in the overview settings

When the installer settings are changed, the system will request to confirm. When confirmation is complete, the screen will shortly turn OFF and "busy" will be displayed for several seconds.

The most commonly used installation settings are accessible through the menu structure. Their location is mentioned by the breadcrumb indication (#). Additionally, all installer settings can also be found in "5.1.3 Menu structure: Overview installer settings" on page 17.

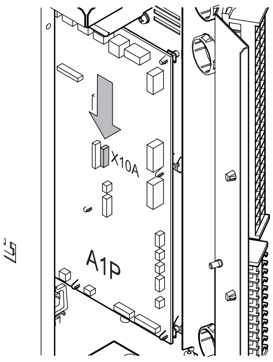
For access to the setting codes, see "To access the installer settings" on page 12.

Not all settings are accessible through the menu structure. Some are only accessible through their code. Then in the table explained below, the bread crumb is set as N/A (not applicable).

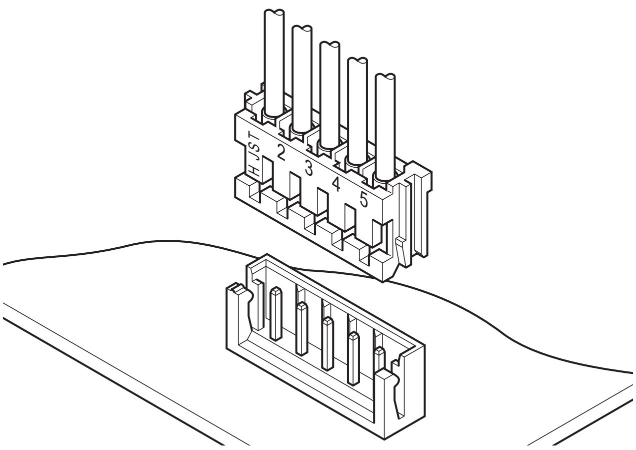
To connect the PC cable to the switch box

Prerequisite: The EKPCCAB* kit is required.

1 Connect the cable with USB connection to your PC.
2 Connect the plug of the cable to X10A on A1P of the switch box of the indoor unit.



3 Pay special attention to the position of the plug!



To access the most used commands

To access the installer settings

1. Set the user permission level to Installer.
2. Go to [A]: > Installer settings.

To access the overview settings

1. Set the user permission level to Installer.
2. Go to [A.8]: > Installer settings > Overview settings.

To set the user permission level to Installer

1. Go to [6.4]: > Information > User permission level.
2. Press for more than 4 seconds.

   Result: is displayed on the home pages.
3. If you do NOT press any button for more than 1 hour or press again for more than 4 seconds, the installer permission level switches back to End user.

To switch between user permission levels (End user and Advanced end user)

1. Go to [6] or any of its submenus: > Information.
2. Press for more than 4 seconds.

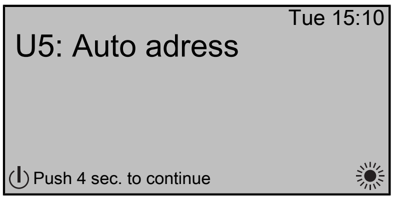
   Result: The user permission level switches to Adv. end user. Additional information is displayed and "+" is added to the menu title.
3. If you do NOT press any button for more than 1 hour or press again for more than 4 seconds, the user permission level switches back to End user.

To copy the system settings from the first to the second user interface

If a second user interface is connected, the installer must first proceed below instructions for the proper configuration of the 2 user interfaces.

This procedure offers you also the possibility to copy the language set from one user interface to the other one: e.g. from EKRUCBL2 to EKRUCBL1.

1. When power is turned on for the first time, both user interfaces display:

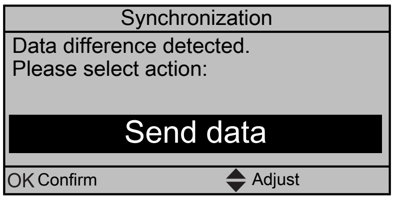


2. Push for 4 seconds on the user interface on which you want to proceed to the quick wizard. This user interface is now the main user interface.

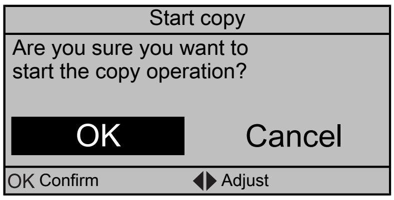
INFORMATION

During the quick wizard, the second user interface displays Busy and will NOT be possible to operate.

3. The quick wizard will guide you.
4. For proper operation of the system, the local data on the two user interfaces must be the same. If this is NOT the case, both user interfaces will display:



5. Select the required action:
   - Send data: the user interface you are operating contains the correct data and the data on the other user interface will be overwritten.
   - Receive data: the user interface you are operating does NOT contain the correct data and the data on the other user interface will be used to overwrite.
6. The user interface requests confirmation if you are sure to proceed.



7. Confirm the selection on the screen by pushing OK and all data (languages, schedules etc.) will be synchronised from the selected source user interface to the other one.

INFORMATION

- During the copying, both controllers display Busy and will NOT allow operation.
- The copy operation can take up until 90 minutes.
- It is recommended to change installer settings, or the configuration itself, on the main user interface.

8. Your system is now set to be operated by the 2 user interfaces.

To copy the language set from the first to the second user interface

See "To copy the system settings from the first to the second user interface" on page 12.

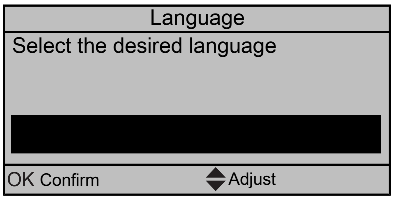
Quick wizard: Set the system layout after first power ON

After first power ON of the system, you are guided on the user interface to do initial settings:

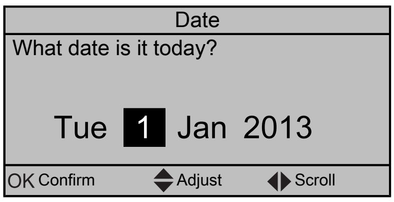
- language,
- date,
- time,
- system layout.

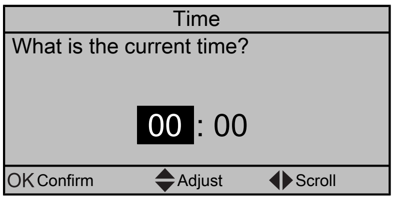
By confirming the system layout, you can proceed with the installation and commissioning of the system.

1. At power ON, the quick wizard starts as long as the system layout was NOT confirmed yet, by setting the language.

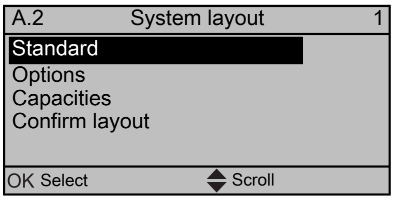


2. Set the current date and time.

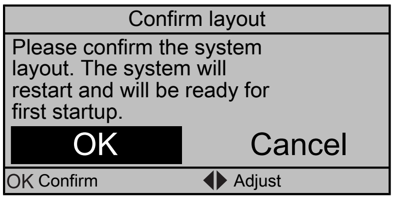




3 Set the system layout settings: Standard, Options, Capacities. For more details, see "5.1.2 Basic configuration" on page 13.



4 Confirm by pressing OK.



5 The user interface re-initialises and you can proceed the installation by setting the other applicable settings and commissioning of the system.

When the installer settings are changed, the system will request to confirm. When confirmation is complete, the screen will shortly turn OFF and "busy" will be displayed for several seconds.

5.1.2 Basic configuration

Quick wizard: Language / time and date

#	Code	Description
[A.1]	N/A	Language
[1]	N/A	Time and date

Quick wizard: Standard

Space heating/cooling settings

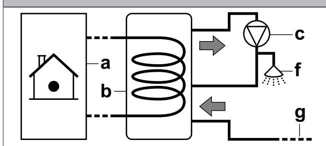
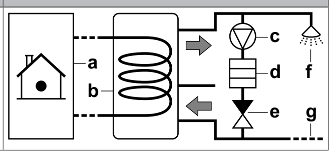
#	Code	Description
[A.2.1.7]	[C-07]	Unit temperature control: ▪ 0 (LWT control): Unit operation is decided based on the leaving water temperature. ▪ 1 (Ext RT control): Unit operation is decided by the external thermostat. ▪ 2 (RT control): Unit operation is decided based on the ambient temperature of the user interface.
[A.2.1.B]	N/A	Only if there are 2 user interfaces: User interface location: ▪ At unit ▪ In room
[A.2.1.8]	[7-02]	Number of water temperature zones: ▪ 0 (1 LWT zone): Main ▪ 1 (2 LWT zones): Main + additional
[A.2.1.9]	[F-0D]	Pump operation: ▪ 0 (Continuous): Continuous pump operation, regardless of thermo ON or OFF condition. ▪ 1 (Sample): When thermo OFF condition occurs, the pump runs every 5 minutes and the water temperature is checked. If the water temperature is below target, unit operation can start. ▪ 2 (Request): Pump operation based on request. **Example:** Using a room thermostat and thermostat creates thermo ON/OFF condition.

Quick wizard: Options

Domestic hot water settings

#	Code	Description
[A.2.2.1]	[E-05]	Domestic hot water preparation: ▪ 0 (No): NOT possible ▪ 1 (Yes)(default): Possible
[A.2.2.2]	[E-06]	Domestic hot water production: ▪ 0 (Type 1): by boiler ▪ 1 (Type 2): by tank
[A.2.2.A]	[D-02]	Domestic hot water pump: In case of [E-06]=0 ▪ 0 (No)(default): NOT installed In case of [E-06]=1 ▪ 0 (No)(default): NOT installed ▪ 1 (Secondary rtrn): Installed for instant hot water ▪ 2 (Disinf. shunt): Installed for disinfection See also illustrations below.

In case of [E-06]=1

Domestic hot water pump installed for...	
Instant hot water	**Disinfection**
	

a Indoor unit
b Tank
c Domestic hot water pump
d Heater element
e Non-return valve
f Shower
g Cold water

Thermostats and external sensors

#	Code	Description
[A.2.2.4]	[C-05]	External room thermostat for the **main** zone: ▪ 1 (Thermo ON/OFF): When the used external room thermostat or heat pump convector can only send a thermo ON/OFF condition. No separation between heating or cooling demand. ▪ 2 (H/C request): When the used external room thermostat can send a separate heating/cooling thermo ON/OFF condition.
[A.2.2.5]	[C-06]	External room thermostat for the **additional** zone: ▪ 0: N/A ▪ 1 (Thermo ON/OFF): When the used external room thermostat or heat pump convector can only send a thermo ON/OFF condition. No separation between heating or cooling demand. ▪ 2 (H/C request): When the used external room thermostat can send a separate heating/cooling thermo ON/OFF condition.
[A.2.2.B]	[C-08]	External sensor: ▪ 0 (No): NOT installed. ▪ 1 (Outdoor sensor): Connected to PCB measuring the outdoor temperature. ▪ 2 (Room sensor): Connected to PCB measuring the indoor temperature.

Digital I/O PCB

#	Code	Description
[A.2.2.6.2]	[D-07]	Solar pump station kit: ▪ 0 (No): NOT installed ▪ 1 (Yes): Installed
[A.2.2.6.3]	[C-09]	Alarm output on optional EKRP1HB PCB: ▪ 0 (Normally open): The alarm output will be powered when an alarm occurs. ▪ 1 (Normally closed): The alarm output will NOT be powered when an alarm occurs. This installer setting allows distinction between detection of an alarm and detection of a power failure to the unit. See also table below (Alarm output logic).

Alarm output logic

[C-09]	Alarm	No alarm	No power supply to unit
0 (default)	Closed output	Open output	Open output
1	Open output	Closed output	

Demand PCB

#	Code	Description
[A.2.2.7]	[D-04]	Demand PCB Indicates if the optional demand PCB is installed. ▪ 0 (No): NOT installed ▪ 1 (Yes): Installed

Energy metering

#	Code	Description
[A.2.2.8]	[D-08]	Optional external kWh meter 1: ▪ 0 (No): NOT installed ▪ 1: Installed (0.1 pulse/kWh) ▪ 2: Installed (1 pulse/kWh) ▪ 3: Installed (10 pulse/kWh) ▪ 4: Installed (100 pulse/kWh) ▪ 5: Installed (1000 pulse/kWh)
[A.2.2.C]	[D-0A]	Optional gas meter: ▪ 0 (No): NOT installed ▪ 1: Installed (1 pulse/m³) ▪ 2: Installed (10 pulse/m³) ▪ 3: Installed (100 pulse/m³)

Savings mode

The user can choose whether switching between operation modes is either economically or ecologically optimised. Set to Economical, the system will in all operating conditions select the energy source (gas or electricity) based on energy prices, resulting in a minimisation of energy costs. Set to Ecological, the heat source will be selected based on ecological parameters, resulting in a minimisation of primary energy consumption.

#	Code	Description
[A.6.7]	[7-04]	Defines whether switching between operation modes is either economically or ecologically optimised. ▪ 0 (Economical)(default): reduction of energy costs ▪ 1 (Ecological): reduction of primary energy consumption, but not necessarily energy costs

Primary energy factor

The primary energy factor indicates how many units of primary energy (natural gas, crude oil, or other fossil fuels, prior to undergoing any human-made conversions or transformations) are needed to obtain 1 unit of a certain (secondary) energy source, such as electricity. The primary energy factor for natural gas is 1. Assuming an average electricity production efficiency (including transportation losses) of 40%, the primary energy factor for electricity equals 2.5 (=1/0.40). The primary energy factor allows you to compare 2 different energy sources. In this case, the primary energy use of the heat pump is compared to the natural gas use of the gas boiler.

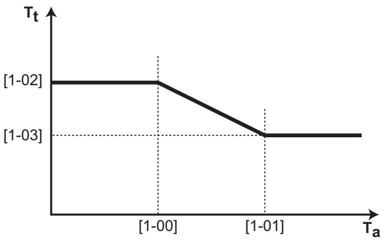
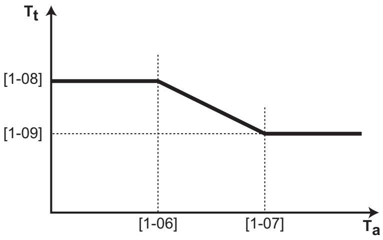
#	Code	Description
N/A	[7-03]	Compares the primary energy use of the heat pump with that of the boiler. 0~6, step: 0.1 (default: 2.5)

INFORMATION

The primary energy factor can always be set, but is only used in case the savings mode is set to Ecological.

Space heating/cooling control

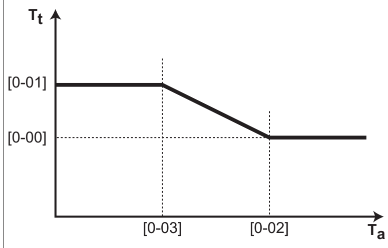
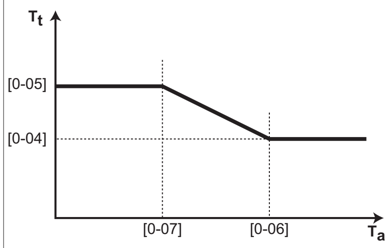
Leaving water temperature: Main zone

#	Code	Description
[A.3.1.1.1]	N/A	Set point mode: ▪ 0 (Fixed): Absolute ▪ 1 (Weather dep.): Weather-dependent ▪ 2 (Fixed/scheduled): Absolute + scheduled (only for leaving water temperature control) ▪ 3 (WD/scheduled): Weather-dependent + scheduled (only for leaving water temperature control)
[A.3.1.1.3]	[1-00] [1-01] [1-02] [1-03]	Weather-dependent curve (heating):  ▪ T_t: Target leaving water temperature (main) ▪ T_a: Outdoor temperature
[A.3.1.1.4]	[1-06] [1-07] [1-08] [1-09]	Only for EHYHBX08. Weather-dependent curve (cooling):  ▪ T_t: Target leaving water temperature (main) ▪ T_a: Outdoor temperature

INFORMATION

In order to optimise comfort as well as running costs, it is recommended to choose weather-dependent setpoint operation. Set the settings carefully; they have significant influence on heat pump as well as boiler operation. Too high leaving water temperature can result in constant boiler operation.

Leaving water temperature: Additional zone

#	Code	Description
[A.3.1.2.1]	N/A	Set point mode: ▪ 0 (Fixed): Absolute ▪ 1 (Weather dep.): Weather-dependent ▪ 2 (Fixed/scheduled): Absolute + scheduled (only for leaving water temperature control) ▪ 3 (WD/scheduled): Weather-dependent + scheduled (only for leaving water temperature control)
[A.3.1.2.3]	[0-00] [0-01] [0-02] [0-03]	Weather-dependent curve (heating):  ▪ T_t: Target leaving water temperature (additional) ▪ T_a: Outdoor temperature
[A.3.1.2.4]	[0-04] [0-05] [0-06] [0-07]	Only for EHYHBX08. Weather-dependent curve (cooling):  ▪ T_t: Target leaving water temperature (additional) ▪ T_a: Outdoor temperature

Pump control: Flow target

#	Code	Description
N/A	[8-0B]	Target flow rate during heat pump operation.
N/A	[8-0C]	Target flow rate during hybrid operation.
N/A	[8-0D]	Target flow rate during boiler operation.

INFORMATION

Changing these settings can result in discomfort. Refer to the installer reference guide for more information.

Leaving water temperature: Modulation

#	Code	Description
[A.3.1.1.5]	[8-05]	Leaving water temperature modulation: ▪ 0 (No): Disabled ▪ 1 (Yes): Enabled. The leaving water temperature is calculated according to the difference between desired and actual room temperature. This allows better matching of the heat pump capacity to actual required capacity and results in less start/stop cycles of the heat pump and more economic operation.

Leaving water temperature: Emitter type

#	Code	Description
[A.3.1.1.7]	[9-0B]	Reaction time of the system: ▪ 0: Quick. **Example:** Small water volume and fan coils. ▪ 1: Slow. **Example:** Large water volume, floor heating loops. Depending on the system water volume and the heat emitters type, the heat up or cool down of a space can take longer. This setting can compensate for a slow or a quick heating/cooling system by adjusting the unit capacity during the heat up/cool down cycle.

Quick heat up function

#	Code	Description
N/A	[C-0A]	Indoor quick heat up function: ▪ 0: OFF. ▪ 1 (default): On. Only applicable in case of room thermostat control. The function will start up the gas boiler when the actual room temperature is 3°C lower than the desired room temperature. The large boiler capacity can quickly boost up the room temperature to the desired temperature. This can be useful after long periods of absence or after a breakdown of the system.

Domestic hot water control

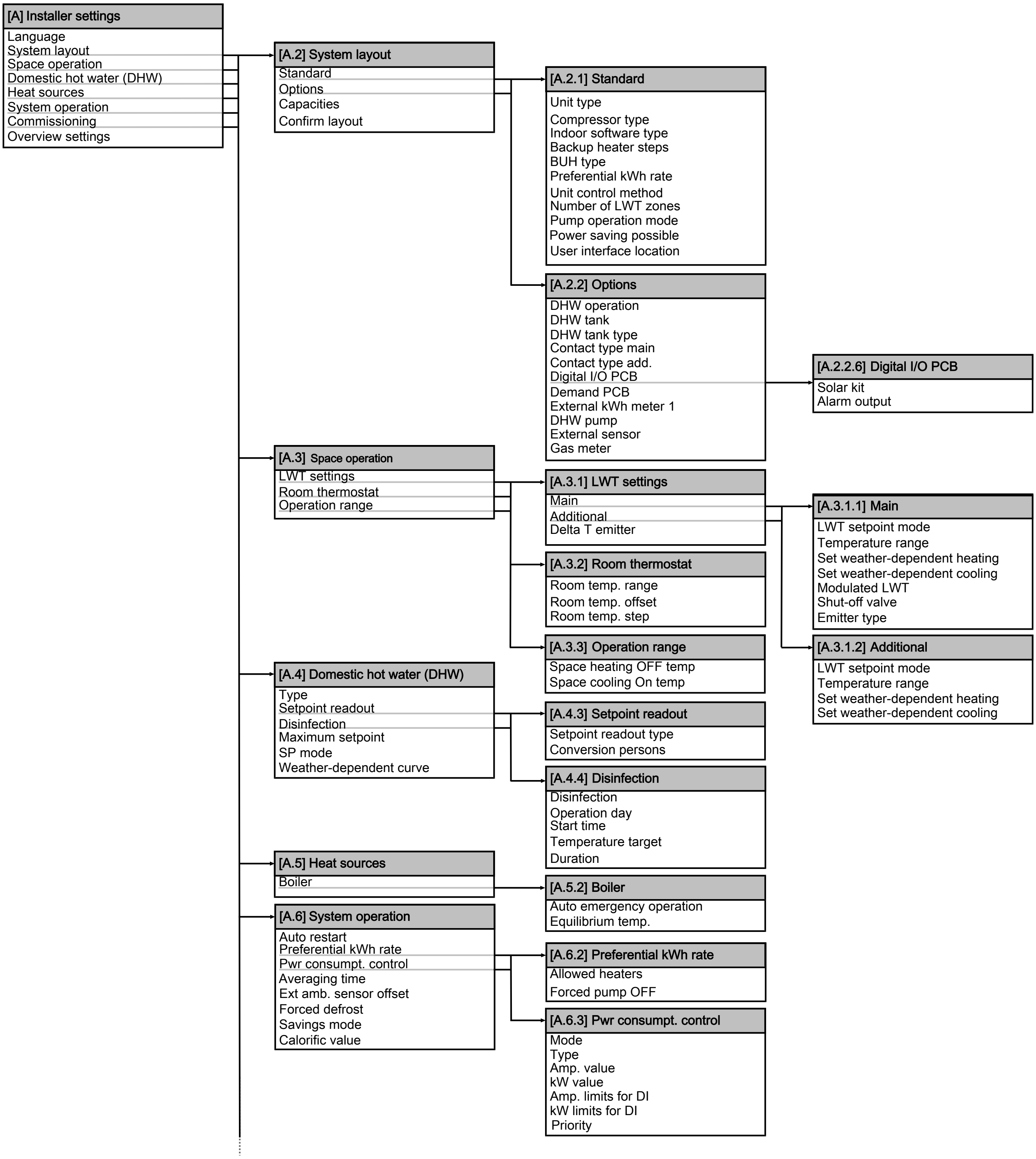
Only applicable in case an optional domestic hot water tank is installed.

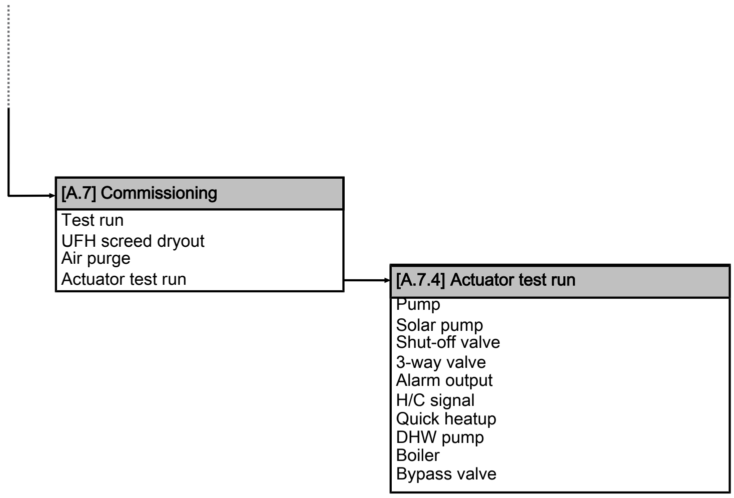
#	Code	Description
[A.4.1]	[6-0D]	Domestic hot water Type: ▪ 0 (Reheat only): Only reheat operation is allowed. ▪ 1 (Reheat + sched.): Same as 2, but between the scheduled heatup cycles, reheat operation is allowed. ▪ 2 (Scheduled only): The domestic hot water tank can ONLY be heated according to a schedule.
[A.4.3.1]	N/A	How is the tank temperature to be displayed on the user interface? ▪ As temperature. 60°C ▪ As graphic: The temperature has to be displayed as available hot water for x persons. If you choose this, you also have to configure which number equals which temperature under [A.4.3.2.1]~[A.4.3.2.6]: 4
[A.4.5]	[6-0E]	The maximum temperature that users can select for the domestic hot water. You can use this setting to limit the temperature at the hot water taps.

Contact/helpdesk number

#	Code	Description
[6.3.2]	N/A	Number that users can call in case of problems.

5.1.3 Menu structure: Overview installer settings




[A.7] Commissioning
Test run
UFH screed dryout
Air purge
Actuator test run
[A.7.4] Actuator test run
Pump
Solar pump
Shut-off valve
3-way valve
Alarm output
H/C signal
Quick heatup
DHW pump
Boiler
Bypass valve

6 Commissioning

6.1 Checklist before test run

Do NOT operate the system before the following checks are OK:

☐	The **indoor unit** is properly mounted.
☐	The **outdoor unit** is properly mounted.
☐	The **gas boiler** is properly mounted.
☐	The following **field wiring** has been carried out according to this document and the applicable legislation: ▪ Between the local supply panel and the indoor unit ▪ Between the indoor unit and the valves (if applicable) ▪ Between the indoor unit and the room thermostat (if applicable) ▪ Between the indoor unit and the domestic hot water tank (if applicable) ▪ Between the gas boiler and the local supply panel (only applicable in case of hybrid system)
☐	The **communication cable** between the gas boiler and the indoor unit is properly mounted.
☐	The system is properly **earthed** and the earth terminals are tightened.
☐	The **fuses** or locally installed protection devices are installed according to this document, and have not been bypassed.
☐	The **power supply voltage** matches the voltage on the identification label of the unit.
☐	There are NO **loose connections** or damaged electrical components in the switch box.
☐	There are NO **damaged components** or **squeezed pipes** on the inside of the indoor and outdoor units.
☐	There are NO **refrigerant leaks**.
☐	The **refrigerant pipes** (gas and liquid) are thermally insulated.
☐	The correct pipe size is installed and the **pipes** are properly insulated.
☐	There is NO **water leak** inside the indoor unit.
☐	There is NO **water leak** inside the gas boiler.
☐	There is NO **water leak** in the connection between the gas boiler and the indoor unit.
☐	The **shut-off valves** are properly installed and fully open (field supply).
☐	The **stop valves** (gas and liquid) on the outdoor unit are fully open.
☐	The **air purge** valve is open (at least 2 turns).
☐	The **pressure relief valve** purges water when opened.
☐	The **gas boiler** is switched ON.

6.2 To perform an air purge

Prerequisite: Make sure the user interface shows the home screens and that the space heating and domestic hot water demands are turned off.

1 Go to [A.7.3]: ☰ > Installer settings > Commissioning > Air purge.
2 Set the type, speed and circuit.
3 Select Start air purge and press OK.
4 Select OK and press OK.

Result: The air purge starts. It stops automatically when done. To stop it manually, press ⏻, select OK and press OK.

6.3 To perform a test run

Prerequisite: Make sure the user interface shows the home screens and that the space heating and domestic hot water demands are turned off.

1 Go to [A.7.1]: ☰ > Installer settings > Commissioning > Test run.
2 Select a test and press OK. **Example:** Heating.
3 Select OK and press OK.

Result: The test run starts. It stops automatically when done (±30 min). To stop it manually, press ⏻, select OK and press OK.

INFORMATION

If 2 user interfaces are present, you can start a test run from both user interfaces.

- The user interface used to start the test run displays a status screen.
- The other user interface displays a "busy" screen. You cannot stop the test run as long as the "busy" screen is shown.

6.4 To perform an actuator test run

Prerequisite: Make sure the user interface shows the home screens and that the space heating and domestic hot water demands are turned off.

1 Make sure the room temperature control, the leaving water temperature control and the domestic hot water control are turned OFF via the user interface.
2 Go to [A.7.4]: ☰ > Installer settings > Commissioning > Actuator test run.
3 Select an actuator and press OK. **Example:** Pump.
4 Select OK and press OK.

Result: The actuator test run starts. It automatically stops when finished. To stop it manually, press ⏻, select OK and press OK.

6.4.1 Possible actuator test runs

- Pump test

INFORMATION

Calibration of the produced heat calculation is included in this test.

Make sure that air is purged before executing the test run. Also avoid causing disturbances in the water circuit during the test run.

- Solar pump test
- Shut-off valve test
- 3-way valve test
- Alarm output test

- Cooling/heating signal test
- Quick heat-up test
- DHW pump test
- Gas boiler test
- Bypass valve test

INFORMATION

The setpoint during a boiler test run is 40°C. Keep in mind the 5°C overshoot that is possible during boiler operation, especially in combination with floor heating loops.

6.5 To perform an underfloor heating screed dryout

Prerequisite: Make sure the user interface shows the home screens and that the space heating and domestic hot water demands are turned off.

1. Go to [A.7.2]: ☰ > Installer settings > Commissioning > UFH screed dryout.
2. Set a dryout program.
3. Select Start dryout and press OK.
4. Select OK and press OK.

Result: The underfloor heating screed dryout starts. It stops automatically when done. To stop it manually, press ⏻, select OK and press OK.

7 Hand-over to the user

Once the test run is finished and the unit operates properly, please make sure the following is clear for the user:

- Fill in the installer setting table (in the operation manual) with the actual settings.
- Make sure that the user has the printed documentation and ask him/her to keep it for future reference. Inform the user that he can find the complete documentation on the url as earlier described in this manual.
- Explain the user how to properly operate the system and what he/she has to do in case of problems.
- Show the user what he/she has to do in relation to maintaining the unit.
- Explain the user about energy saving tips as described in the operation manual.

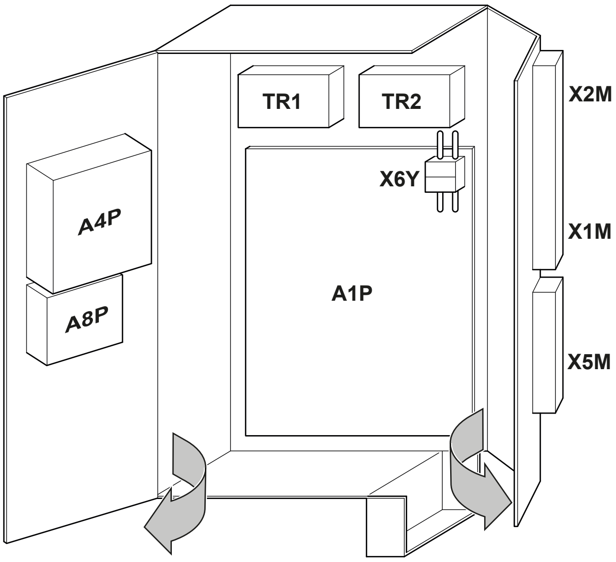
8 Technical data

8.1 Wiring diagram

8.1.1 Wiring diagram – components: Indoor unit

See the internal wiring diagram supplied with the unit (on the inside of the indoor unit switch box cover). The abbreviations used are listed below.

Position in switch box



User installed options:

Remote user interface

External indoor thermistor

Digital I/O PCB

Demand PCB

Domestic hot water tank

Domestic hot water tank with solar connection

External outdoor thermistor

Instant domestic hot water recirculation

Main leaving water temperature:

On/OFF thermostat (wired)

On/OFF thermostat (wireless)

External thermistor on On/OFF thermostat (wireless)

Heat pump convector

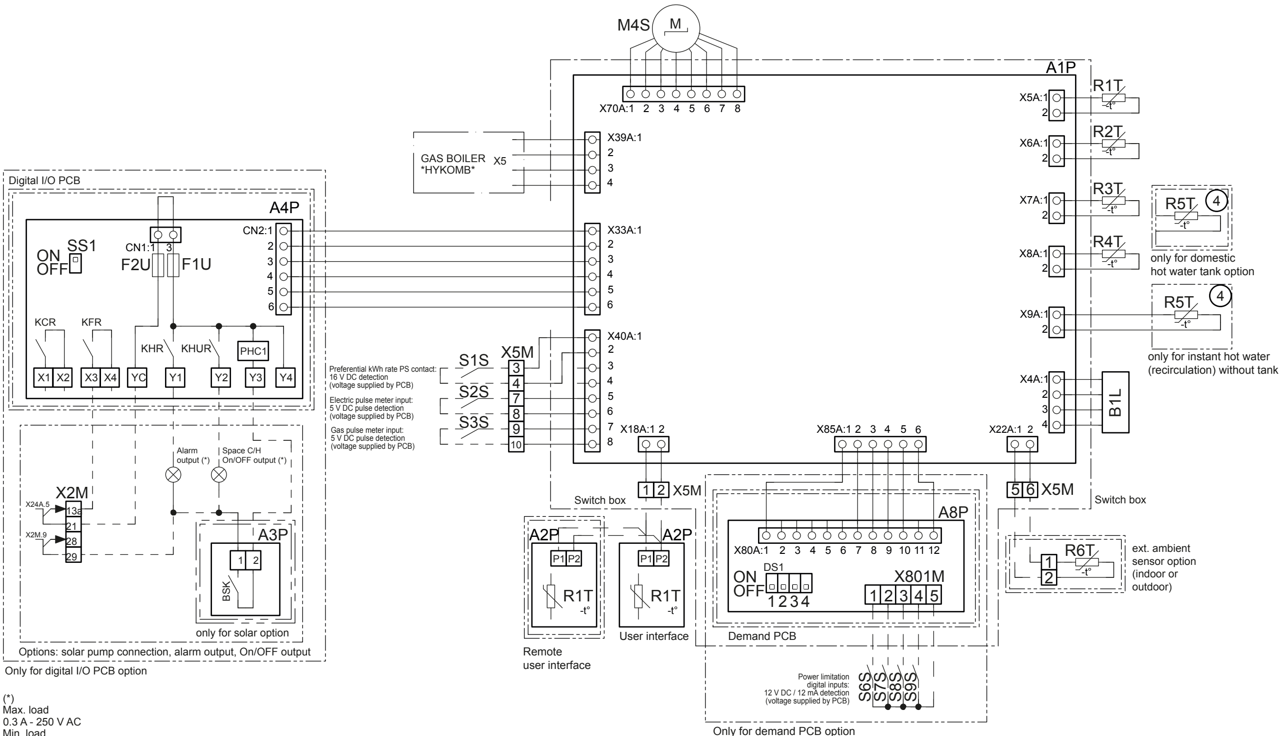
Additional leaving water temperature:

On/OFF thermostat (wired)

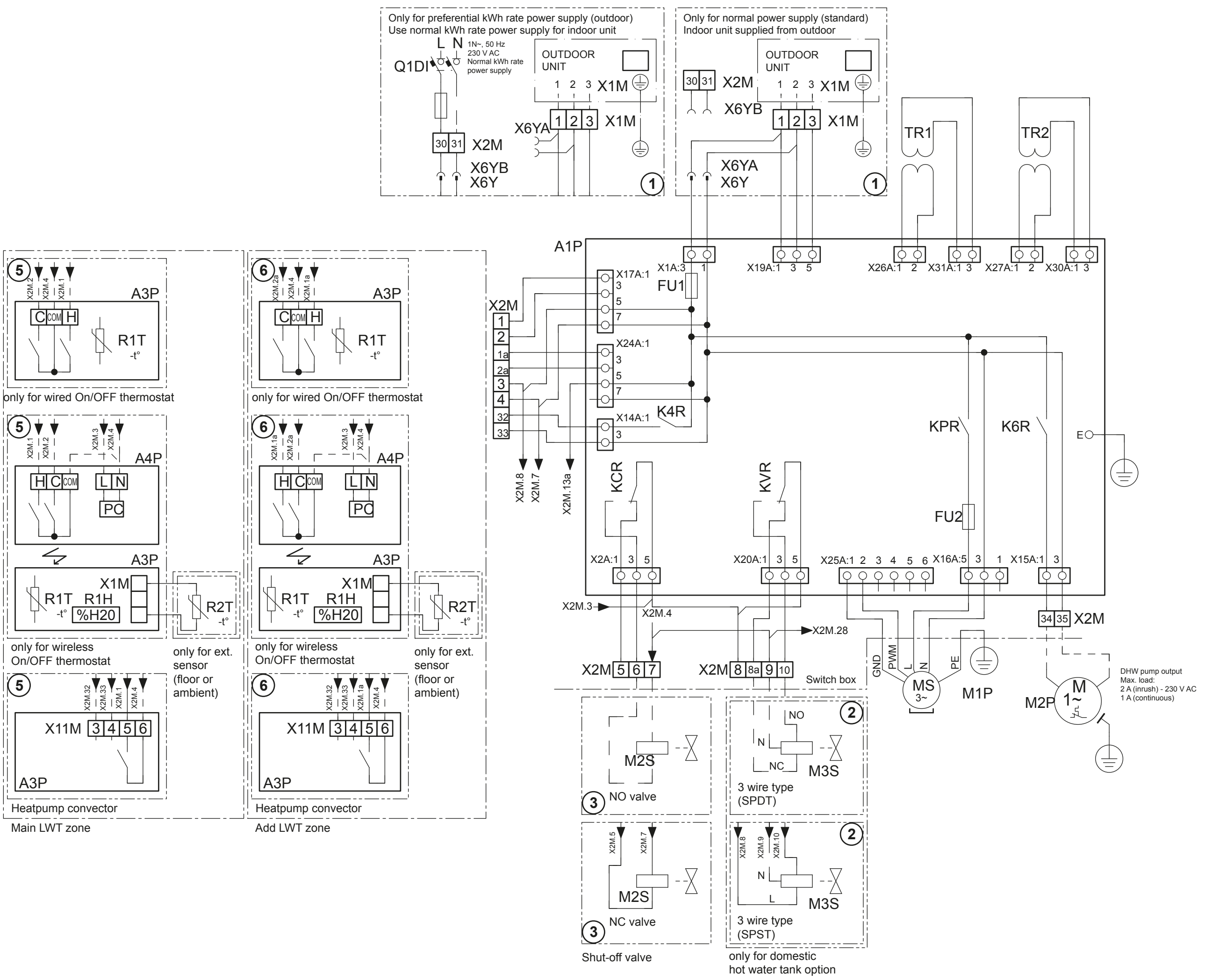
On/OFF thermostat (wireless)

External thermistor on On/OFF thermostat (wireless)

Heat pump convector



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A1P		Main PCB (hydrobox)
A2P		User interface PCB
A3P	*	Solar pump station PCB
A3P	*	On/OFF thermostat
A3P	*	Heat pump convector
A4P	*	Digital I/O PCB
A4P	*	Receiver PCB (Wireless On/OFF thermostat, PC=power circuit)
A8P	*	Demand PCB
B1L		Flow sensor
DS1 (A8P)	*	DIP switch
F1U, F2U	*	Fuse 5 A 250 V for digital I/O PCB (A4P)
FU1		Fuse T 6.3 A 250 V for main PCB (A1P)
K*R		Relay on PCB
M1P		Main water supply pump
M2P	#	Domestic hot water pump
M2S	#	2-way valve for cooling mode
M3S		3-way valve for floor heating/domestic hot water tank
M4S		Bypass valve for gas boiler
PHC1	*	Optocoupler input circuit
PS		Switching power supply
Q*DI	#	Earth leakage circuit breaker
R1T (A1P)		Outlet water heat exchanger thermistor
R1T (A2P)		Ambient sensor user interface
R1T (A3P)	*	Ambient sensor On/OFF thermostat
R2T (A1P)		Outlet gasboiler thermistor
R3T (A1P)		Refrigerant liquid side thermistor
R4T (A1P)		Inlet water thermistor
R5T (A1P)	*	Domestic hot water thermistor
R6T (A1P)	*	External indoor or outdoor ambient thermistor
R1H (A3P)	*	Humidity sensor
S1S	#	Preferential kWh rate power supply contact
S2S	#	Electrical meter pulse input
S3S	#	Gas meter pulse input
S6S~S9S	#	Digital power limitation inputs
SS1 (A4P)	*	Selector switch
TR1, TR2		Power supply transformer
X*M		Terminal strip
X*Y		Connector
	* =	Optional
	# =	Field supply

Notes to go through before starting the unit

X1M	Indoor/outdoor communication
X2M	Field wiring terminal for AC
X5M	Field wiring terminal for DC
— · — · — · — ·	Earth wiring
- - - - - - -	Field supply
⟶ **/12.2	Connection ** continues on page 12 column 2
①	Several wiring possibilities
	Option
	Not mounted in switch box
	Wiring depending on model
	PCB

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4P349587-1C 2013.10